



Lactic acid bacteria  
selected from nature

**Lalvin 31™**  
*Oenococcus oeni*

**MBR™ process**  
direct inoculation



The MBR™ form of lactic acid bacteria represents a Lallemend specific process that subjects the lactic acid bacteria cells to various biophysical stresses, making them better able to withstand the rigors of direct addition to wine. The conditioned MBR™ lactic acid bacteria that survive are robust and possess the ability to conduct reliable malolactic fermentation (MLF).

## APPLICATION

Lalvin 31™ was selected by the Institut Français de la Vigne et du Vin (IFV) - France - for its capacity to achieve good and reliable malolactic fermentation (MLF) under limiting wine conditions such as low pH and low temperature. It is a suitable Malolactic Starter Culture to protect varietal characters in wines with good tannin structure. By being able to ferment at low temperature, Lalvin 31™ gives the winemaker control to obtain wine with higher colour intensity and stability. Thanks to its remarkable quality, Lalvin 31™ appears to be a very efficient culture to control MLF under conditions typically found in Septentrional regions (Pinot noir,...).

## OENOLOGICAL AND MICROBIOLOGICAL PROPERTIES

- pH tolerance : > 3.1
- Alcohol tolerance : up to 14 % vol.
- SO<sub>2</sub> tolerance : up to 45 mg/L total SO<sub>2</sub> (pay attention to molecular SO<sub>2</sub> at low pH)
- T° tolerance : > 13°C
- High nutrition demand
- Good implantation
- MLF Kinetic : Moderate
- Low volatile acidity production
- Bacteria cinnamoyl esterase negative : cannot produce precursors for ethylphenol production by *Brettanomyces*
- No production of biogenic amines
- Co-inoculation possible

## ORGANOLEPTICAL PROPERTIES

Beyond bio-deacidification, Lalvin 31™ is a true winemaking agent, which contributes to the sensory complexity and the quality of wine as follows :



This sensory contribution can be further supported by the combination with an appropriate selected yeast strain and timing of ML bacteria inoculation.

**LALLEMAND**

LALLEMAND OENOLOGY



## INSTRUCTIONS FOR USE

### Sequential inoculation (post Alcoholic fermentation)

Bacteria inoculation : two options

► **Direct inoculation without rehydration** : Open the sachet and add the bacteria directly into the wine after the end of alcoholic fermentation at the top of the tank or while emptying the tank.

► **Direct inoculation with rehydration step** : For best distribution, you can rehydrate the packet of freeze-dried selected wine bacteria in 20 times its weight of clean chlorine free water at 20°C for a maximum 15 minutes. Add this suspension directly to the wine towards the end of the alcoholic fermentation.

- Stir gently to evenly distribute the selected wine bacteria and minimize the oxygen pickup.
- Under more difficult conditions, add a specific bacteria nutrient.
- Check malolactic fermentation activity (malic acid degradation) every 2 to 4 days.
- Stabilize wine once malolactic fermentation (MLF) is finished.

**Recommended temperature range :**

- White wine / rosé wine : from 16 to 20°C.
- Red wine: from 17 to 25°C.

If limiting conditions (high alcohol > 14.5 vol, or low pH < 3.1, or high SO<sub>2</sub> > 45 ppm) : from 18 to 22°C.

### Co-inoculation (simultaneous Alcoholic fermentation)

**1/ Yeast addition**

Rehydrate the selected dry yeast according to the instructions. Preferably in presence of a rehydration nutrient and inoculate the must.

**2/ Bacteria addition**

Depending on the SO<sub>2</sub> addition at crush:

- Sulfitage < 5 g/hL : wait for 24 hours
- Sulfitage 5-8 g/hL : wait for 48 hours

► **Direct inoculation of bacteria without rehydration** : open the sachet and add the bacteria directly to the must/ wine to be fermented from the top of the tank (white must) or during a pumping-over (red must).

► **Direct inoculation with rehydration step** : for best distribution, you can rehydrate the packet of freeze-dried lactic acid bacteria in 20 times its weight of clean chlorine free water at 20°C for a maximum of 15 minutes and add the suspension to the must/wine to be fermented.

- Assure a good distribution.
- Carefully monitor must temperature, which must be below 30°C at lactic acid bacteria inoculation (alcohol < 5% vol) and below 27°C when the level of 10 % of alcohol is reached.
- Complex nutrients addition at 1/3rd of alcoholic fermentation is recommended.
- Monitor malic acid and volatile acidity.
- If MLF takes place during AF and an unusual increase in volatile acidity is observed add Lysozyme™ (150-200 mg/L).
- Top the wine after alcoholic fermentation (AF).
- Otherwise rack and stabilize after MLF.



## PACKAGING AND STORAGE

- Product in powder form obtained by lyophilisation.
- Available in different dosages for 2.5 hL (66 US gal.) — for 25 hL (660 US gal.) — for 250 hL (6,600 US gal.)
- Once opened, lactic acid bacteria sachet must be used immediately.
- This product can be stored for 18 months at 4°C/40°F or 36 months at -18°C/0°F in original sealed packaging.
- Sealed packets can be delivered and stored for 3 weeks at ambient temperature (<25°C/77°F) without significant loss of viability.

Distributor: